

In the Claims:

SUB E 1. (thrice amended) An electronic switching apparatus for flexibly
interconnecting a plurality of signal endpoints, the apparatus comprising:
a first circuit configured to receive at least one input signal from at least
one input endpoint, the first circuit having at least one pair of barrel shift
registers coupled to at least one of the at least one input endpoint and
configured to receive the at least one input signal, the first circuit further
configured to shift and rotate the at least one input signal and further
configured to transmit at least one output signal; and
a second circuit connected to outputs from the first circuit and
configured to send at least one received signal to at least one output endpoint.

2. (twice amended) The electronic switching apparatus of claim 1, wherein the
at least one input signal comprises a data signal that is configured to be
received in serial form, the data signal including a plurality of data channels
interleaved therein.

3. (twice amended) The electronic switching apparatus of claim 2, wherein the
second circuit further comprises at least one multiplexer configured to be
selectably connected to the at least one pair of barrel shift registers thereby
effectively enabling digital signal switching simultaneously between the at least
one input endpoint and the at least one output endpoint.

1 4. (twice amended) The electronic switching apparatus of claim 1, wherein the
2 at least one input signal comprises a data signal that is configured to be
3 received in parallel form and converted to serial form.

1 5. (twice amended) The electronic switching apparatus of claim 2, wherein the
2 at least one pair of barrel shift registers is configured to interconnect a plurality
3 of received input signals at different times.

1 7. (thrice amended) A method for electronic signal coupling, the method
2 comprising the steps of:
3 receiving a first set of digital signals, the received first set of digital
4 signals being provided to at least one pair of barrel shift registers;
5 shifting and rotating the first set of digital signals; and
6 transmitting a second set of digital signals, the transmitted second set of
7 digital signals being provided from a plurality of multiplexers, the plurality of
8 multiplexers being selectably connected to the barrel shift registers such that
9 at least one signal selected in the first set of digital signals is selectably coupled
10 for transmission in the second set of digital signals.

1 9. (twice amended) The method of claim 7, wherein a plurality of digital signals
2 in the first set of digital signals is transmitted as digital signals in the second
3 set of digital signals separately at different times.

4 **SUB E!** 12. (twice amended) The electronic switching apparatus of claim 1, wherein the

2 at least one pair of barrel shift registers are loadable barrel shift registers.

SUB E! 14. (twice amended) A system for electronic signal coupling comprising:

2 means for receiving a first set of digital signals, the received first set of

3 digital signals being provided to at least one pair of barrel shift registers;

4 means for shifting and rotating the first set of digital signals; and

5 means for transmitting a second set of digital signals, the transmitted

6 second set of digital signals being provided from a plurality of multiplexers, the

7 plurality of multiplexers being selectably connected to the barrel shift registers

8 such that at least one signal selected in the first set of digital signals is

9 selectably coupled for transmission in the second set of digital signals.